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Combat Crew

strategic air command

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Combat Crew

Magazine of the Strategic Air Command - 28th Year of Publication

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ON OUR COVER

SAC's famed B-52, a most reliable element of the nation's defense. For an article on one crew's experience in the B-52, see page 8 and the feature titled "Two Consecutive Flights."

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Major General John J. Murphy
HQ SAC DCS/Logistics

To me, the slogan "keep 'em flying" has special meaning. I am fortunate to be able to use this slogan from both the crewmember's and the logistician's point of view. Articles in this magazine are written specifically for the crewmember, so let me put on my old flying helmet for just a few minutes.

As a crewmember I found nothing more frustrating than having my mission cancelled or delayed due to lack of parts after spending hours completing my mission planning responsibilities. Back some years ago these cancellations or delays were not so frequent because there was plenty of fuel and airframes. and generally more flying time than we needed. In addition, spare parts were relatively inexpensive and unsophisticated and funds were not so tight. Most of the time a good crew chief could make do with what he had to get the sortie off, but those days are gone and we all know it. We fly very expensive and sophisticated aircraft with "black boxes" which might just as well be "gold plated." We are short of funds, airframes, and flying hours and crewmembers need all the "hands-on" time they can get. I know that I am preaching to the choir when I say that, so let me take off my flying helmet and put on my logistician's hat.

As the SAC DCS, Logistics, it is my job to oversee a complicated logistics network and insure that we get the most for our money in terms of manpower and material. My personal aim is to insure that each sortie gets off the ground on time with all systems OR (Operationally Ready), just as I sought to complete my mission requirements when I was at the controls. With this in mind, let me share a recent "success story" involving the coordinated efforts of

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RC-135 RECONNAISSANCE ENHANCEMENT PROGRAM

our logistics staff to solve a real problem.

During the first six months of CY 1976 our RC-135 fleet experienced a large number of mission cancellations at their overseas operating locations. Our support capability was reacting to problems as they occurred rather than preventing them from arising in the first place.

Each logistics function was working in its own direction as it perceived the problem. To develop a consolidated effort, we established a group to review logistics support for the RC-135 RIVET JOINT Program, make recommendations, and initiate corrective action.

The creation of a "Reconnaissance Enhancement Program" gave us a chance to define and resolve major problems that were inhibiting support of RIVET JOINT missions.

After three months, this group put together a program that had an immediate and positive impact. The logistics portion of the SAC Programming Plan for RC-135 Support was rewritten to improve procedures. Maintenance concepts were changed at Forward Operating Bases (FOBs) along with a realignment of maintenance manpower positions for increased productivity. TF33P-9 spare engine levels were increased and assets redistributed for optimum support. The Air Staff approved the SAC request for an improved Air Force precedence rating for Project RIVET JOINT, thereby improving supply support. The navigation system in all RC-135s will be standardized and delivery of $1.2 million of additional spares will begin in August 1977. The Air Staff approved our request for High Priority Mission Support Kits allowing prepositioning of critical spares at each Operating Location (OL); the stock replenishment priority for these kits was increased to insure a high fill rate and transportation initiated actions to expedite movement of all reconnaissance support shipments.

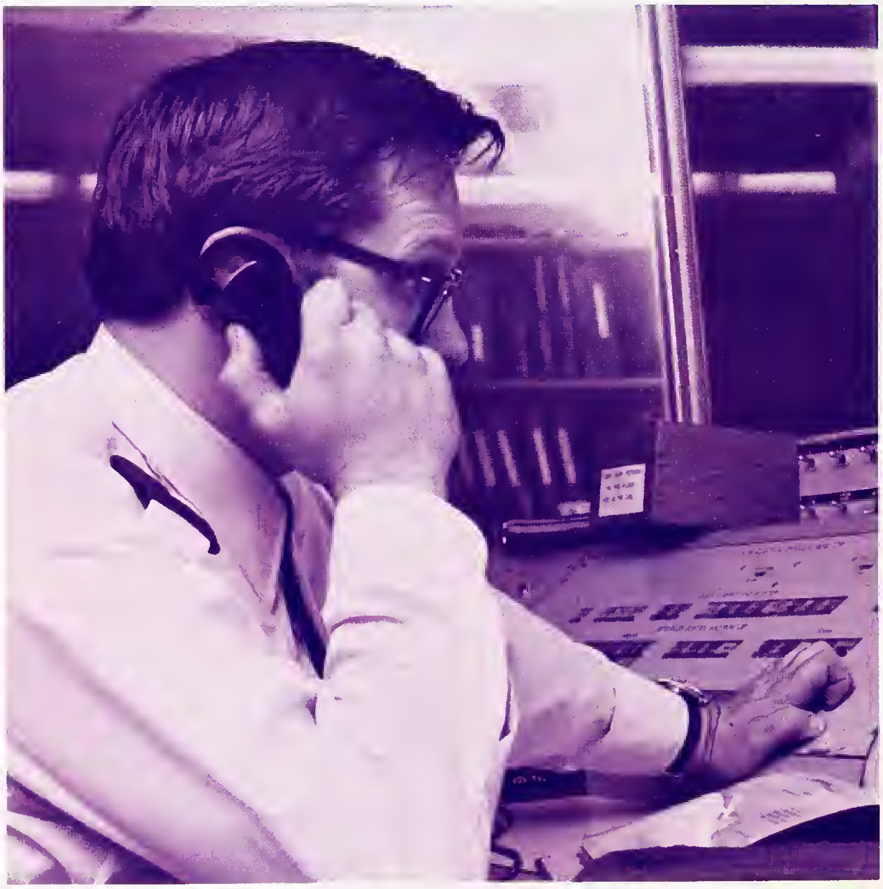
While these actions by themselves may seem insignificant, some required quite a departure from our normal way of doing business. New procedures were required, developed, and implemented. We are no longer solving problems as they occur but managing a comprehensive logistics program designed to provide optimum mission support by anticipating and precluding problems. The Reconnaissance Enhancement Program has shown what can be accomplished by a dedicated group of logisticians, attacking problems under a Management by Objectives philosophy, within a program management framework. The fruits of our efforts are visible; we are meeting the operations contract and there has been a 90% reduction in Not Operationally Ready-Supply (NORS) occurrences.

Unanticipated material failure or other logistics factors may still cause occasional aborts; however, the actions implemented under the Reconnaissance Enhancement Program will minimize such aborts. So much for the success story. Let me conclude by making a couple of points that I think are significant. First, we don't have extra people, money, parts, airframes or flying hours. We have to make each sortie count since there may not be a chance to make it up. Second, we must decide what our main goal is and work together to meet that objective. Our motto in Logistics is "we can handle it" and our goal can be expressed simply "Keep 'em Flying."

381st STRATEGIC MISSILE WING

"WHERE EXCELLENCE IS THE STANDARD"

SAFETY IS A WAY OF LIFE



Capt William Maki, chief, 381st DOTM, at missile procedures trainer.

In November 1963, a legacy started at McConnell AFB, Kansas. It continues today. The legacy? The 381st Strategic Missile Wing's missile safety record, and its first place ICBM position on SAC's Hall of Fame in the pages of Combat Crew.

How has the 381st established such an impressive record? The first thought in the minds of some people is "luck." However, at McConnell, they feel they make their own luck by incorporating basic Air Force and SAC fundamentals into mission requirements.

The goal in the McConnell safety program is to prevent mishaps by creating safety awareness and interest in each individual and by placing these individuals in the safest working environment possible. To accomplish this goal, McConnell personnel apply the following fundamentals: commanders' interest, supervision, education/training and engineering. These elements do not consititute the total missile safety program; however, collectively they serve as its foundation.

Col Donald F. Gaylor, 381SMW commander, realizes as did his prede-

Members of the 381st missile removal/installation team steady tag lines as the crane removes the second stage of Titan II missile.

cessors, that safety is a function of command. To effectively discharge his responsibility in implementing the missile safety program, the commander is kept informed on all aspects of safety. This responsibility, along with the administration of the safety program, rests with the McConnell chief of safety and his staff. "We use every effective means to keep the commander informed. The commander then can direct actions necessary to insure the safety program is implemented."

Once the commander establishes policy, it is the responsibility of subordinates to insure the policies reach individuals performing the task. To assist subordinate commanders in implementing safety policy, the unit missile safety officers and NCOs perform a liaison function for the unit commander and assist in supervising and implementing the program.

The supervisors at McConnell are actively involved in the safety program. They realize they have the responsibility of implementing safety policy and creating safety awareness among their workers. As supervisors, they have opportunity to discover and correct hazards. They can integrate the worker with the job by instilling a positive attitude toward the job. They can also give the worker job knowledge and skill by insisting on safe work practices on the job. Supervisors are also in a position to correct unsafe conditions. Several methods are used to accomplish these factors:

- Day to day observations reveal unsafe practices and conditions and also help to identify incidents which interrupt work routine.
- Shop inspections are used to identify unsafe acts or conditions which cannot be corrected at the activity level.
- Job safety analyses provide the worker with detailed descriptions of each job in terms of duties performed, tools and equipment used, and the sequence of operations.

SSgt Thomas Wilson, missile removal/installation team chief, directs operations using checklist.

Instructor Crew S-223, 381SMW: 1st Lt Ray Ebbs and Capt Tommy Bearry.

Sgt Curtis Vosika, power production shop, listens to a safety briefing from Capt Tommy Bearry as SSgt Ronald Hoffer looks on.

Maj Ronald Gray, chief of shop maintenance, inspects a rocket engine test set with Sgt Forrest Burgess.

Trained and motivated individuals work safely with minimum supervision. To provide assistance to the supervisor in education/training programs, the chief of maintenance and the chief of operations have established training sections to meet special needs for training individuals in their respective jobs.

These two sections share the same responsibility to schedule, monitor and control formal upgrade training, job qualification training, management training, general training, and special technical training. There the similarity ends and each section is unique in the function it performs.

Training control provides specialized training for maintenance personnel and monitors formal on the job upgrade training provided by the supervisor. This section also provides initial and recurring missile safety training, training on the rocket fuel handling clothing outfit, and training on the chemical, oxygen (CHEMOX) and Scot Air Pac breathing devices.

In contrast, the 381st operations training section provides training required by all missile combat crew members. They provide post operational upgrade training for each crew position, transition training for deputy missile combat crew commanders, personalized training in particular tasks, and specialized training such as missile safety training and safety equipment training.

In addition, the operations section develops specialized training for each missile combat crew position. Training programs are developed each month relating to weak task areas identified by the standardization section. The training is then administered through monthly training packages.

After individuals are trained, commanders and supervisors require feedback to insure that personnel remain proficient in their jobs and that they comply with safety directives. The quality control and standardization divisions provide the feedback through periodic evaluations.

Evaluations insure that personnel are qualified, remain proficient, perform work of the highest quality and comply with safe operating procedures. As a result of information obtained through the evaluations, potential problem areas are identified to commanders and supervisors. Commanders and supervisors can then direct actions necessary to insure sound and safe practices.

Once an individual is trained to perform his job, he must be provided with a safe working environment. The most effective method is through safe engineering design. McConnell is fortunate that engineering design has been an integral part in the devel-

TSgt Billie McWilliams, chief, electronics lab shop, gives A1C Thomas Plumber and SSgt Floyd Peterson a safety briefing before they head for a complex.

Briefings are conducted with emphasis on problem solving.

opment of the Titan II weapons system. Over the years several major modifications have updated the complexes. The 381 Civil Engineering Missile Section assists the commander in implementing these design modifications as they occur. In addition to engineering design, they provide technical assistance to the chief of maintenance in correcting equipment problems that could result in damage to missile support equipment. They also provide tech data review on maintenance procedures to insure these procedures are effective and that damage to equipment will not occur during normal operations.

While the McConnell safety office does not get involved with safety engineering at the design level, they are available to assist if any safety problems develop. In addition, they coordinate all safety aspects of the modifications. Through missile engineering efforts, many of the unsafe mechanical and physical conditions which were inherent with the system in 1963 have been identified and eliminated.

No, luck did not create 13 years of excellent missile safety at McConnell. It has been a concerted effort by commanders, supervisor, training and engineering people. This effort has developed safety awareness among people and has given them the safest environment possible in which to accomplish the mission. Along with this commendable safety record, the wing has won numerous awards for excellence and professionalism since its activation at McConnell in March 1962. Among the honors the wing has earned are three outstanding unit awards, the USAF Best Maintenance Organization award, the Lee R. Williams Memorial Missile Trophy (Best ICBM unit, won three times), and the coveted Blanchard Trophy (won in 1972 and 1975).

The 381SMW is the only Titan II wing to ever win the Blanchard

Continued on page 30

SSgt John Cane and SSgt Charles Garrison perform an electrical systems check.

TWO CONSECUTIVE FLIGHTS

Captain Stephen O. Fought
22 Bomb Wing, March AFB

On two consecutive flights, an aircrew had inflight aircraft malfunctions which could have resulted in catastrophes. In both cases, the crew used sound judgment, good crew coordination, proper Dash-one procedures and received advice and assistance through the command post. This all combined to prevent two possible mishaps.

Shortly after takeoff, on a routine B-52 training sortie, the right drop tank refuel valve light illuminated. The copilot stopped the gauge at 19.2 thousand pounds by pulling the circuit breaker, thus preserving the accuracy of the total fuel quantity gauge. The refuel master switch was turned on and the refuel valve light went out, indicating a possible reversal of the wiring of the valve or the light. The gunner reported no fuel venting from the right drop tank, so a malfunction of the light was assumed and the refuel master switch was placed OFF.

The mission was continued normally until the aircraft departed the initial point on the second low level bomb run. The copilot, who had been closely monitoring the fuel sequence, reported the number four main tank appeared to be 1000 pounds less than the number one main, indicating the right drop was not feeding. The run was continued and a climb initiated to FL 350 after completing the last release.

As the aircraft was relatively close to home station, best endurance altitude and airspeed were selected to allow the crew the most time to work the problem, while creating a minimum imbalance. At level off, the drop tank imbalance was 3000 pounds and the fuel remaining was:

Left Drop	16.2
Left Outboard Wing	00.0
No. 1 Main	15.0
No. 2 Main	17.5
Forward Body	00.0
Center Wing	19.7
Mid Body	00.0
Aft Body	00.0
No. 3 Main	17.9
No. 4 Main	10.2
Right Outboard Wing	00.0
*Right Drop	19.2
Total	115.7
Usable	96.5

*Not Usable

Tech order emergency procedures were initiated while holding at initial approach fix at best endurance altitude. The master refuel switch was turned on and the drop tank refuel secondary valve switch was opened. The refuel secondary valve light went out when the master refuel switch was placed on, therefore, the position of the valve was in question. The refuel system was set up to transfer fuel from the right drop through the refuel system to the number four main tank and to the forward body tank. The forward body was selected to negate the possibility of a number four main tank gauge error. The fuel feed valve control circuit breaker was pulled in accordance with tech order procedures and the tanks to be replenished were monitored. Neither tank filled. The fuel quantity gauge circuit breaker for the right drop tank was then reset and the procedure duplicated, to no avail.

The aircraft was then placed in a series of climbs/dives and 30-degree bank turns to attempt to shake open the refuel secondary valve. There was no success with these methods.

Therefore, it was decided to penetrate to a warmer altitude and attempt to warm up a possible frozen valve. The performance manual and load adjuster were used to establish a 10,000-pound imbalance between the drop tanks with a center wing ballast of 24.4 pounds for CG control at 30.0% MAC. This put the total weight of the aircraft at 277,000 pounds which was well above the 210,000-pound limit for lateral control on landing with a 10,000-pound imbalance in the drop tanks.

A descent was made and no indication of fuel feeding from the drop tank was observed. A normal landing was made using airbrakes four and approximately one-half rudder control.

Lessons to be learned. To execute these procedures in flight takes time and time means fuel. The pilots must determine whether best endurance or best range procedures will give them the time to follow through on tech order procedures. Then fuel management proceudres must be used to give a safe margin for CG and lateral control should the tech order procedures fail to correct the problems. The result of this malfunction was an uneventful landing, but could have been radically different had the crew not used tech order procedures and planned ahead to fly the airplane.

The maintenance corrective actions were to replace a cannon plug ground wire and replace the fuel gauge.

Another B-52 routine training mission included air refueling, low level bombing, a high altitude celestial navigation leg, and one hour of transition. The mission was proceeding normally until the aircraft departed the initial point for a triple-altitude bomb run Olive Branch-1. Approximately five minutes prior to scheduled release, the radar navigator attempted to open the bomb doors manually. He observed no bomb door valve lights and the pilot had four hydraulic pack failure lights. The bomb doors went to an intermediate (unlatched) position. After approximately five seconds, the number one, two, and three hydraulic pack failure lights went out and number four remained on. The pilot and radar navigator quickly ascertained that all switches were properly positioned and that sufficient bleed air was available for hydraulic pack operation.

A check of all main hydraulic packs indicated the number four hydraulic pack and standby pump had failed (zero pressure). The hydraulic pack switch was positioned OFF and the number four hydraulic package control and standby pump circuit breakers were pulled. The bomb run continued normally with the bomb doors in an intermediate position. The bombing system switch was in manual so no unexpected bomb door activation would take place. All releases were reliable. The departure and climb to FL 350 were normal except for the degradation in performance that resulted from the partially opened bomb doors.

Analysis of the situation began at level off. The major problem to contend with was the inoperative number four hydraulic system because the right aft gear extension was inoperative. The tech order specifically prohibits use of the emergency extend system if the standby pressure for the failed pack does not build up. Number four pressure was zero.

The copilot calculated best range altitudes and airspeeds as FL 430 and .77 Mach. Best range was selected due to distance from home station and the desire to conserve fuel while working the hydraulic system problem. However, the gunner's air conditioning system would not hold below 18,000 feet cabin altitude when flying above FL 350 and the bomb doors were partially open. Therefore, the crew elected to use FL 350 and .72 Mach. Fuel on board was 92,000 pounds.

Continued on page 19

ENGINE IN-FLIGHT MONITORING UPDATE

Lt Col James L. Pettigrew
CMSGT Robert M. McCord
HQ SAC/LGME Offutt AFB

Editor's Note: In July 1976 and January 1977, we published articles on the initial test of this program and then on its expansion to all SAC tankers. This is a report of the results obtained from seven months application to the SAC KC-135 fleet.

The January 1977 article opened, "All SAC KC-135 crews are now flying airplanes with more reliable and safer engines." That statement has been validated by seven months operation. Read on and see if you agree.

In October 1976, the simplified engine performance monitoring program was applied to all SAC KC-135 flights. Flight crew support has been outstanding and in-flight engine data has been provided to each wing's engine performance evaluation team in the field maintenance squadron. In April, flight crews returned data from 87% of their flights. The maintenance specialists have corrected the in-flight data to the base-line conditions and plotted the corrected data on individual graphs for each engine. Each engine's original signature has been established from test cell and flight line trim data. Trends on these plots can indicate deterioration within the engine and identify the few engines which are likely to develop in-flight problems. These few engines are then scheduled for extra maintenance effort and are put back in A-1 condition.

The following results have been obtained from tanker crew's in-flight data sheets between 1 Oct 1976 and 30 Apr 1977:

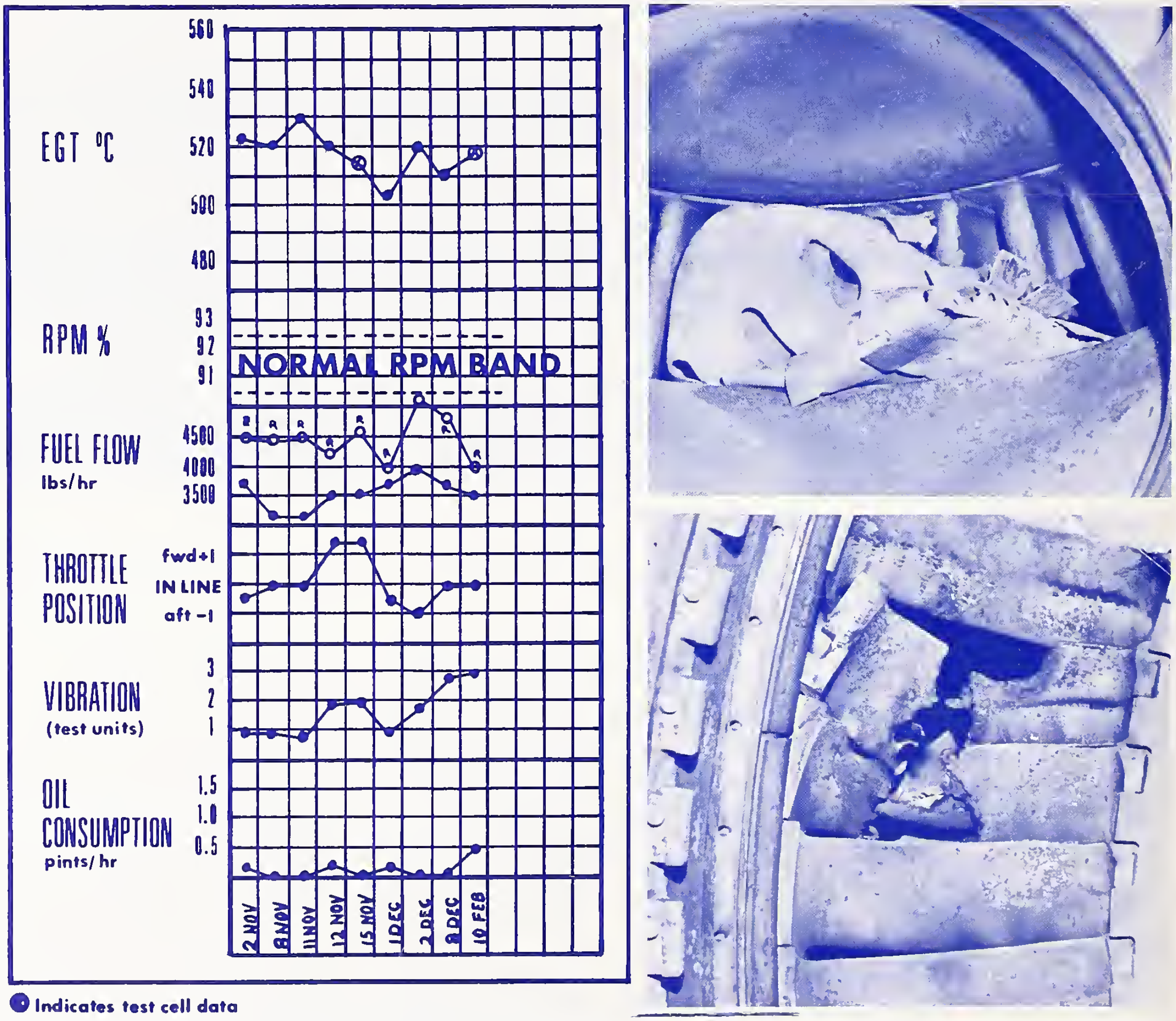


Fig. 1. The trend signature on the work sheet above showed cause for engine removal. Prior to teardown, a test cell run was performed with satisfactory results. On teardown, the damage was visible. Bad engines don't always run hot and fast.

- **Flight Safety. 132 potential engine failures identified, verified, and fixed before failure.**
- **Improved mission capability. In-flight shutdown rate dropped by ½ (0.24 prior to the monitoring program to 0.12/1000 engine hours Jan-Apr 77).**
- **Improved equipment condition. Over 1150 additional engine related problems have been identified and repaired (stuck bleed valves, bleed air leaks, EPR and EGT gauges out of tolerance, etc).**
- **Cost avoidance from reduced secondary damage ($6.2 million plus).**

All engine problems were identified from the trend plots of the in-flight data. None of them had been evident to the flight crews through normal flight deck engine monitoring.

A most startling revelation that resulted from the dynamic engine monitoring program is that current ground test and in-flight engine limits are effective for only about one-third of the cases of initial deterioration. Tech Order evaluation criteria for identifying sick engines are high EGT and high N_2 RPM. These criteria are valid but not all-inclusive. In fact, two thirds of the engines removed and verified by visual inspection under this program satisfactorily passed an on-the-wing engine trim, test cell evaluation — or both. Figure 1 illustrates such an engine. The chart shows the N_2 RPM running below the normal RPM band for Normal Rated Thrust (NRT). The photo inset shows the damage found by teardown and visual inspection. A test cell run was performed prior to teardown and the engine was certified satisfactory for flight by all evaluation criteria. In-flight performance monitoring not only improves reliability of engine operation and saves maintenance dollars but apparently provides a capability to identify engine problems that we have not had in the past.

The monitoring program was extended to SAC B-52D and G aircraft in April 1977 and is expected to be ready for B-52H aircraft by July 1977.

Flight crews have asked why data is taken at NRT instead of cruise thrust? This is the innovation which allowed the data correction to be simplified to a simple algrebraic operation. The NRT power produces three advantages; first, the engine fuel control maintains a maximum-continuous turbine inlet temperature for the existing atmospheric pressure and temperature. At this operating point, the number and magnitude of the variables are reduced, simplifying the task for normalizing the engine instrument readings to the baseline. The second advantage of the use of NRT is that anomalies in engine performance are more pronounced than at cruise power. As a result, engine gas path distress

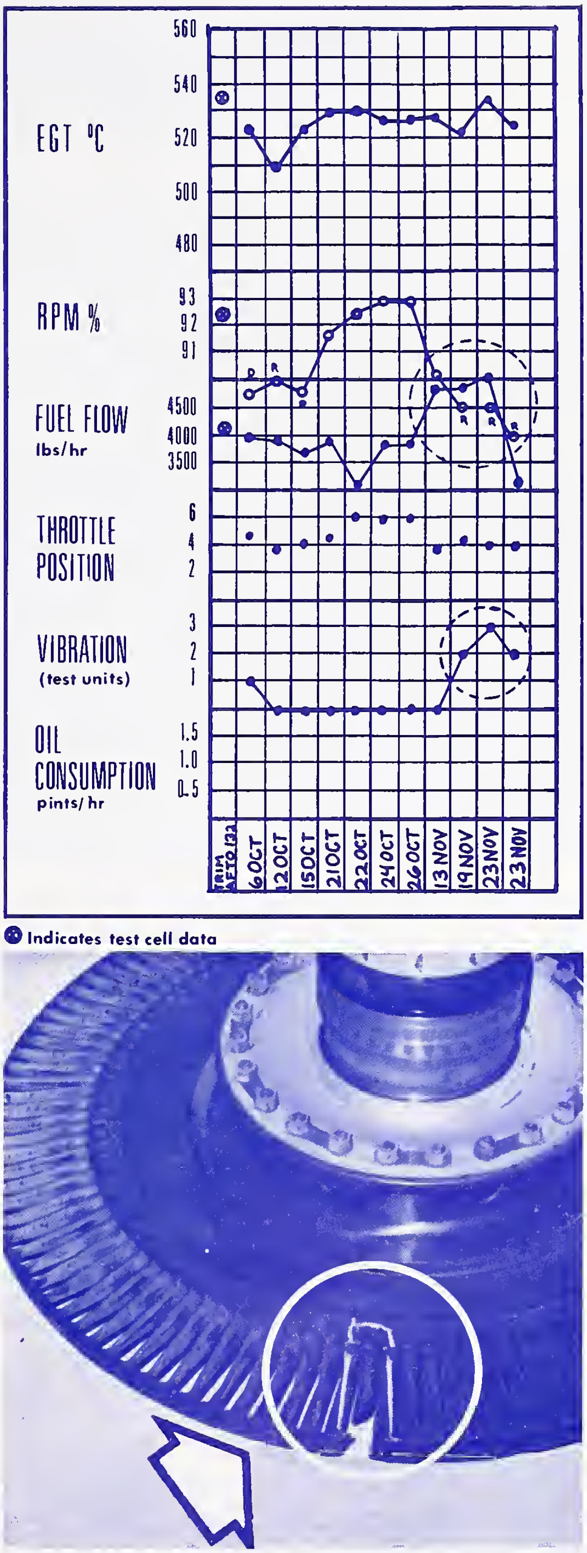


Fig. 2. The trend signature above showed an increase in vibration with changes in RPM and fuel flow. In October, a combustion can liner had failed but the engine remained in service until the T-wheel threw a bucket. During this period there was no crew writeup and the engine passed an on wing trim check. High EGT and fast N_2 RPM are not all inclusive criteria for identifying a damaged engine.

shows up earlier and more clearly on the trend plot. The third benefit of NRT is that engine bleed valves should always be closed, eliminating a source of variation in the trend plots which would add uncertainty in their interpretation.

Simple correction tables were developed for NRT which allow the maintenance technician to normalize, plot and interpret the in-flight data in less than 15 man-minutes per sortie. With the help of the flight crews who record in-flight instrument readings, which tell how each engine is performing in its operating environment, maintenance is using engine condition monitoring capability at a very low cost.

Even the simple subjective method of checking in-flight vibration works. Figure 2 illustrates how vibration identified a problem. The engine had low RPM and a vibration increase, yet continued to operate without an in-flight write-up. Because of the monitoring program, the engine was removed for inspection. The photo shows the damage found by visual inspection.

Normally, engine deterioration is identified by trends in in-flight performance. There are, however, cases where engines have deterioration prior to the start-up of the monitoring program. In such cases there may not be a trend before failure.

Usually in these cases the problem will show up as continued steady operation well away from average values. Figure 3 illustrates such a case. Action was taken after the second data point confirmed the low N_2 RPM. The engine was written up in the AFTO Form 781 as being in "watch" status after the first data point to tell the flight crew that the in-flight data on that engine was critical in confirming the indication of a problem. The second data point confirmed the engine operating line and visual inspection after disassembly verified the problem.

The ability to identify problems which exist but go undetected is available with engine performance monitoring. This ability is causing some increase in maintenance workload and replacement parts costs. Because the repair is done before the damage becomes extensive, the repair cost of additional damage will be reduced. Additionally, labor cost may be reduced in the future as scheduled inspections give way to on-condition maintenance scheduling.

With continued cooperation between flight crews and maintenance personnel, the cost savings you are producing could grow to twenty million dollars annually with the introduction of the program into the B-52 fleet. The results promise to be a revolutionary change to the way of doing jet engine maintenance in the Strategic Air Command, saving untold dollars, increasing flight safety, and improving mission capability. More important to you as you push the throttles for takeoff is the added confidence that deterioration and abnormal internal engine conditions have been identified and fixed before you could tell they existed.

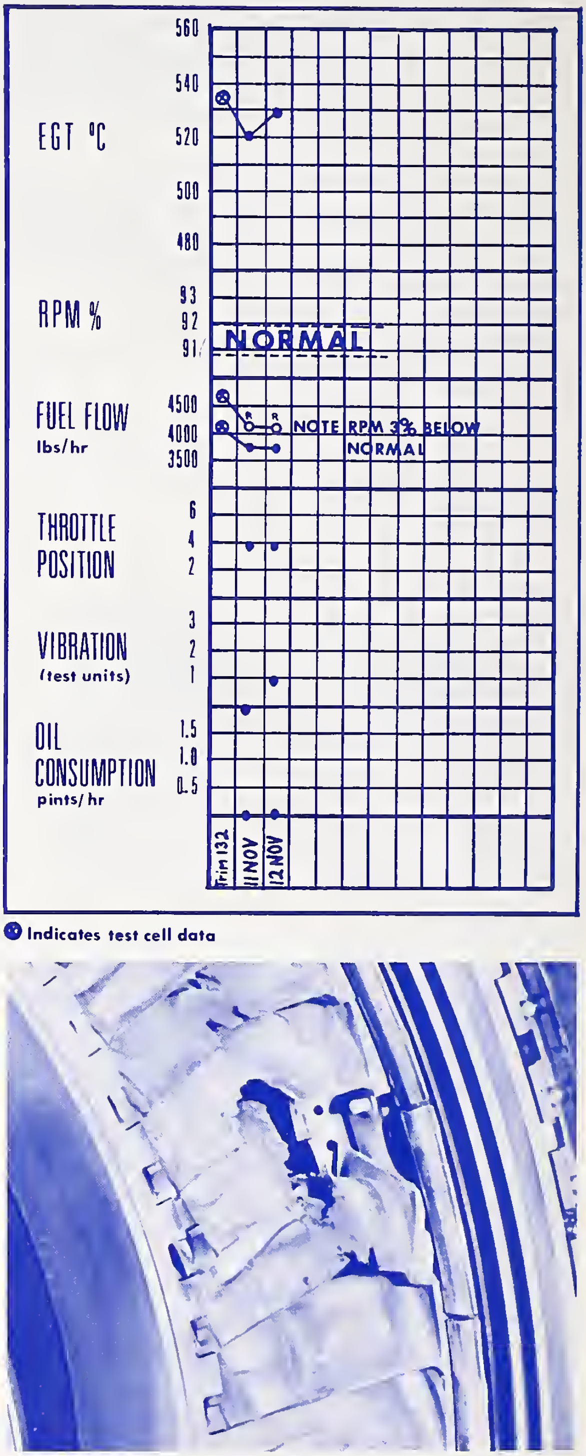
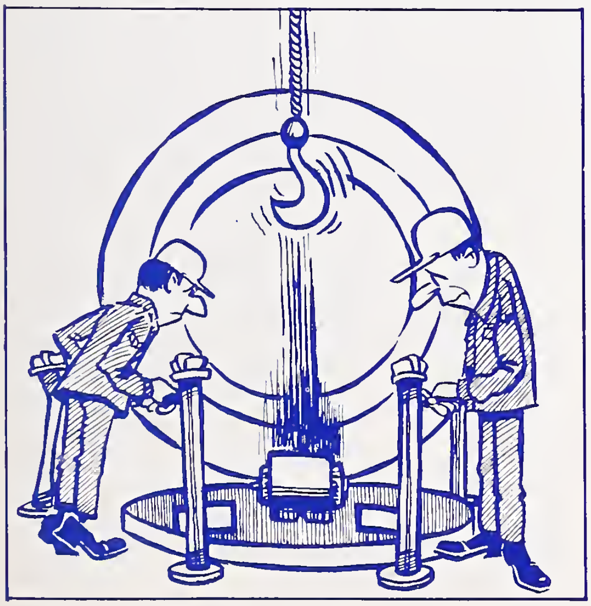


Fig. 3. The engine plotted above operated at near normal EGT but with low N_2 RPM. Again no crew writeup, but on removal the above damage was visible. Cool and slow does not equal a good engine.

MISSILE MISHAPS

PLUGGING A SRAM

During the download inspection of a SRAM from an FB-111, approximately 350 marks and cuts were detected on the missile. A small piece of red plastic was embedded in one of the cuts. The damage was caused by the engine inlet shield plug assembly swinging against the missile. The lower bungee that secured the plug came loose in the wind and allowed the plug to swing freely. Investigation revealed that the plugs will not stay in place when the aircraft is moved if there is more than a slight wind. Actions taken by the unit were: (1) Removal of all inlet covers from alert aircraft; (2) Maintenance personnel briefed on the cause of this mishap; and (3) A Category I Material Deficiency Report submitted. Moral: Just because it has been done for years does not make it right.



OOPS!
LOOK OUT BELOW!

A MINUTEMAN maintenance team was raising a workcage motor out of the personnel access hatch (PAH) when it fell from the hoist hook. It fell to the bottom of the PAH and caused almost $3500.00 damage to the workcage support structure and motor. Fortunately, no one was under the workcage motor when it fell. Investigation revealed that the maintenance team failed to follow correct handling procedures. Moral: What goes up will not come down if correct handling procedures are used.

TEAMMATES

The following was contained in a research study, prepared by Major Kerry G. Herron, SAC/LGM, while a student at the Air Command and Staff College.

General Russell E. Dougherty, Commander in Chief, Strategic Air Command, has said:

"The relationship which exists between aircraft operations and maintenance personnel at wing and squadron level can only be described as critically significant. Smooth, cooperative relations between wing operations and maintenance personnel are essential if the unit mission is to be successfully accomplished and professional standards maintained.

". . . To be successful, the commander must eliminate operations/maintenance competition under win-lose conditions. If it appears that a win for operations translates into a loss for maintenance, the atmosphere between the two organizations becomes too tense, at best, and at worse, becomes saturated with suspicion, distrust and defensiveness which ultimately can lead to hostility and mission degradation."

The question is: What actions can be taken to improve the relationship? Here are my suggestions on actions that a unit manager can take to improve the relationship. They address the situation in relation to the Air Force-wide environment. Some actions are not applicable in the SAC environment, but the complete list of suggested actions is documented to provide the total concept.

Demonstration of Commander's Interest, Identification, and Support for Improving the Operations/Maintenance Relations. The commander is a central figure in the relations between operations and maintenance. His interest and active support in outlining and developing the programs to improve the relationship are necessary if improvements are to be achieved.

Provide Mission Scope Briefings to All Personnel. These briefings, presented by a team of personnel from operations and maintenance, should explain how the wing mission supports the overall Air Force mission. The briefing should also demonstrate why an integrated team effort is required to provide unit aircraft to support combat efforts. Specifics of how unit aircraft are employed should be covered.

Broad Maintenance Orientations for Operations Personnel. The purpose of the orientation is to familiarize the aircrews and other operations personnel with the organization and facilities within the maintenance organization. This orientation will also serve to acquaint operations personnel with major maintenance problems and limitations.

In-depth Maintenance Orientations for Operations Personnel. This action serves to expose selected crews to maintenance and personnel management problems and to develop an appreciation for maintenance considerations by operations personnel. Within SAC the Additional Duty Career Development Program (ADSAC) provides an excellent opportunity for operations personnel to gain experience within aircraft maintenance.

Operations Orientation for Maintenance Supervisors. The purpose is to acquaint selected middle level maintenance supervisors with the operations scheduling and management problems as well as operational requirements and limitations.

Operations Briefing for Maintenance Control Personnel. This briefing would attempt to explain operational considerations which impact the execution of the flying schedules. The briefing should also highlight how certain decisions made by maintenance can influence unit operations.

Simulator Orientations for Avionics Specialist. The orientation should provide the specialist an understanding of how the equipment is used to support the mission and how certain equipment malfunctions impact mission capability. The orientation would also provide an opportunity for aircrews and specialists to become better acquainted.

Flight Orientations. The flights would reward outstanding performance among maintenance personnel and provide a better understanding of how unit aircraft are utilized during mission accomplishment. The option of using flight orientations are dependent upon aircraft type mission and availability of aircraft.

Aircrew/Ground Crew Inspection Crossfeed. The crossfeed should provide aircrew and ground crew personnel a better understanding of the inspections performed by each other. This would provide both parties a better understanding of how their actions interrelate by observing the inspections accomplished.

Maintenance Liaison Officers. The liaison officer (from the operations squadron) would act as a point of contact between each flying squadron and the maintenance activity. His objective would be to prevent situations from developing which would be detrimental to the realtions between operations and maintenance.

Social Liaison Activities. These social contacts between operations and maintenance personnel are intended to create an integrated unit spirit rather than the "we" and "they" approach.

Quality Control/Operations Liaison. The QC officer provides an excellent avenue for aircrew feedback concerning the quality of the aircraft provided the crews. He can also convey to the aircrews the maintenance problems that may impact mission support. By accomplishing these actions, the QC officer can provide a valuable service to both operations and maintenance.

There are probably other actions that could be developed to improve the relation between operations and maintenance. However, the above listing provides a start. Initiating these actions rests with the unit managers. General Dougherty summarized the importance of the relationship as follows:

". . . The attitudes of commanders, flight crews, staff and maintenance personnel are indeed significant. The knowledge and trust crewmembers exhibit for crew chiefs is a prime example of personal attitudes which impact on the performance of the unit. Mutual respect, trust and belief that the other guy is dedicated to the mission is paramount."

Suggested actions cannot be effectively legislated in a regulation or manual. To be effective, the program must be actively pursued by top management within the unit. These are the individuals that establish the tone of the relationship. A more detailed and complete explanation of each recommended action is available in research study Number 1270-76. The Air Command and Staff College has agreed to provide SAC with copies of the study.

If you desire a copy, send your request to HQ SAC/LGMM. After you review the research study, use your own judgment to determine the specific suggestions which would be beneficial to your own wing. Then the actions are up to you.

OLD STRATOFREIGH NEVER DIE . . . Par

TERS

II

Editor's note. This is the second of a two-part series about the stratofreighter and its contribution to the history of airpower.

Major John R. Dockendorff
HQ SAC Offutt AFB

In Part I we briefly traced the history of the KC-97 through its initial years of service to SAC, the transfer to some ANG units beginning in 1961, and the total phase out of the SAC fleet which was completed in 1965.

The first ANG units — Chicago IL and Milwaukee WI, were equipped with KC-97(F) and later (G) and they too quickly found that the airplane was severely speed limited for refueling fighters. In 1964, prior to the modification which added the jets, another record was set. A large scale deployment of ANG fighters was escorted to Europe by KC-97s. The operation was unique because all fighters and tankers were ANG assets. The problems of conducting such an operation with the speed incompatibility between the fighters and the KC-97 must have been a factor in the approval of the modification which added jets as described in Part I.

The success of the KC-97(L) in refueling both ANG and active fighters led to the decision to equip nine units. The units sent their G models to Hayes International Corporation in Birmingham, Alabama, a few at a time for the mod which included the jets and a rendezvous radar. The remaining airplanes needed to equip the nine units were "unpickled" at Davis-Monthan and flown to Birmingham. The nine units that received eight airplanes each are listed below. Also listed is the year in which the L model conversion was accomplished.

126 AREFW, Chicago IL — 1966
128 AREFG, Gen Mitchell (Milwaukee) WI — 1966
134 AREFG, McGhee Tyson (Knoxville) TN — 1966
136 AREFW, Dallas TX — 1966
139 AREFG, Rosecrans (St Joseph) MO — 1970
151 AREFG, Salt Lake City UT — 1973
160 AREFG, Rickenbacker OH — 1966
161 AREFG, Phoenix AZ — 1973
171 AREFW, Greater Pittsburgh PA — 1973

These units were assigned to TAC as gaining command and began providing CONUS refueling training. Then came OPERATION CREEK PARTY.

When France withdrew from NATO they demanded that USAF vacate all French bases by 1967. The loss of US bases in France required moving all fighters to England and West Germany. All refueling support would have to come from SAC KC-135s in Spain. A further complication was that priority missions in Southeast Asia forced SAC to transfer most of the tankers there. USAFE requests for refueling could not be met.

In early 1967 ANG offered the support of the "new" KC-97 tankers which would be operated by the then five, later nine, ANG units in turn, rotating six airplanes from CONUS to Frankfurt, Germany, year around. Two week rotation was required because the normal limit of active duty (other than voluntary) for ANG members in unmobilized status is 15 days per year.

USAFE planners were skeptical about relying on part-time people

A NAME IS BORN — **Crews of flying tankers like to party almost as much as fighter pilots, maybe more. It was at a party in Germany, being given by members of the active Air Force for members of the Air Guard who were flying compatibility tests in early 1967, that the operational nickname for the Air Guard's refueling mission was born.**

After a few rounds, a hearty meal and a few glasses of apple wine, the crowd gathered around the bar for a nightcap. Someone proposed a goodnight toast: "It is a hell of a creek and this was a hell of a party." Whereupon someone else piped up, "that's a hell of an idea for a nickname — CREEK PARTY!" Thanks to Col James B. Deerin NJ ARNG (Ret), Reprinted from The National Guardsman.

with their cantankerous old piston-powered "bug-smashers," but had little choice but to accept the concept on a trial basis. The intial three sorties per day soon grew to six, and TAC and USAFE Headquarters were soon receiving reports of amazing mission effectiveness and scheduling reliability (over 90%).

Somebody must have been impressed because OPERATION CREEK PARTY has now completed ten continuous years of support to USAFE.

Ironically, the first unit to try the CREEK PARTY operation in May 1967 was also the last. The operation was terminated 30 April 1977 due to the scheduled phase-out of all KC-97(L)s by the end of 1977. The 136 AFEFW of Dallas TX ANG had the distinction of flying the first and last KC-97(L) mission in Europe.

This operation marked the first time in military history that ANG units have operated for an extended period of time from foreign soil without being mobilized or being at war.

Some impressive records were compiled in spite of bad weather in Europe and the North Atlantic area, balky, complicated engines and related systems, and the problems of rotating six old airplanes and over 100 personnel between CONUS and Europe every two weeks for ten years.

Some statistics accumulated include approximately 120 million pounds of fuel transferred to USAFE fighters during some 50,000 air refuelings. This doesn't sound like much by KC-135 or ATCA (KC-747?) standards, but maximum offload for the old '97(L) is 36,000 pounds or less depending on the distance to the A/R track. In addition, the rotation concept required over 3000 Atlantic crossings with at least one refueling stop each at such balmy spots as Goose Bay, Labrador, Keflavik, Iceland, or the gusty crosswind capital of the world — Lajes in the Azores. But the best part is the safety record.

In the ten years of OPERATION CREEK PARTY there were ZERO major accidents. In fact, the most serious incident was a damaged nose gear mechanism due to a slick runway at Rhein Main. Quite a record for an airplane sporting yesterday's technology whose design dates back to the early 1940s. The overall safety record has improved considerably since the fifties.

A major accident rate of 3.54 per 100,000 flying hours during the first ten years was mentioned earlier. When this is compared with the years since 1965, we see a rate of only .23 per 100,000 hours. Conservative and highly experienced ANG aircrews and maintenance may be partly responsible for this nearly 16-fold improvement, but the jet engines have to get a large share of the credit. In a way it is unfortunate that the airplane can't fly a few more years to continue to reduce its lifetime accident rate. It presently stands at 2.2 per 100,000 hours which for example, is below the 1976 all-USAF rate of 2.8. It takes a long time to erase that rate of the '50s. Let's all knock on wood and hope that the two majors since 1965 ('69 and '70) will be the last and that when the last prop stops after the final flight late this year, we will have nothing but good memories for the old work horse.

When the phase-out of the '97 started back in 1959, few believed that the day would come when a KC-97 would refuel **every** fighter in the USAF inventory including the new A-10, F-15, F-16, and F-17. "Many-motor" receivers include B-47, B-52, B-58, RB-66 — and even a recent series of tests with a modified C-130.

The retirement ceremony can't be delayed much longer, however, without some major changes in LG support. By Air Staff order, R-4360 overhaul contracts have expired and refiners of 115/145 octane gasoline have all but ceased production. Let's hope there is enough left for the last flight to the Davis-Monthan "boneyard."

It seems a shame to park a set of airplanes that have only 5000-7000 hours on them as compared for example to 14,000-15,000 hours on the MAC T-39 fleet and even more on some B-52 models. (The '97s provided to ANG were the latest models available and only average about 375 hours each per year.) One company recently did a study and made a proposal to the USAF to replace the four recips and two jets with four turboprops and thus add years to the '97s useful life, but the program was never approved. Too bad — would have made a heck of an airplane for fighter refueling.

Some may shed a tear when the last flight is complete. Some will remember the good TDYs along with the "automatic rough" sound of the engines when you coasted out on an overwater flight. Some will remember the Swedish nurses at Sondestrom, Greenland. Some will remember the luxury of a cockpit nearly 11 feet wide with 19 windows. That "greenhouse" is so wide that even though the pilots sit at arm's length apart, each has his own aisle for entry **outboard** of the seat. Speaking of comfort — the old 377 Stratocruiser offered airline passengers "unparralleled" luxury, including the first lower deck lounge with a spiral stairway, but that is another story . . .

So when the last prop glints in the afternoon sun and shudders to a stop after the last KC-97 flight and the last crew member slowly descends the entry stairs . . . (OK, we are getting carried away . . . everyone turn the page.)

TWO CONSECUTIVE FLIGHTS

Continued from page 9

Review of tech order procedures presented a dilemma. If the gear could not be extended, the procedure was to burn down to 20,000 pounds of usable fuel to decrease the stress on landing. However, this left no fuel to proceed to an alternate. As this was a night mission, and the home base had a great tendency to "sock in" after 0200 local, a close examination of fuel on board and weather had to be made. Fortunately, the destination was forecasting VFR and calm winds.

Tech order procedures were followed to attempt to start the hydraulic pack and standby pump. No start was obtained. The next step was to attempt to lower the gear using number four standby pressure alone. The copilot calculated the fuel degradation with an extended main gear and open bomb doors. With the fuel on board the crew could arrive at destination with over 45,000 pounds of fuel. All gear normal control circuit breakers were pulled with the exception of the number four main. The number four standby pump and hydraulic package control circuit breakers were pushed in and the gear handle was lowered. The handle was left in the gear down position for five minutes. There was no pressure buildup on the number four pack and the gear did not unlock. The handle was recycled to gear up and the circuit breakers repositioned.

At this point, the command post was contacted and advised of the problem. The crew proceeded to the initial approach fix and held while awaiting technical advice. The basic tech order procedures were repeated and fuel was being burned at a minimum rate. The command post recommended a descent to traffic pattern altitude and then have the gunner enter the 47 section and wheel well to inspect the pack for possible leakage/damage. The aircraft was placed on hard autopilot at 5000 feet MSL and the gunner inspected the pack and reported no visible excess hydraulic fluid in either area. The crew and command post then discussed the feasibility of using the emergency extend system as there was apparently little chance the number three hydraulic system would be depleted. However, the right aft gear must rotate into the slipstream during extension. Even though the gunner had observed no damage, the prospect of an intermediate gear position due to failure of the number three system dictated a partial gear landing.

The standby pump and hydraulic package control circuit breakers for the number four pack were checked out and fuel burned down to 20,000 pounds in the main tanks. Five thousand pounds were in each main and crossfeed valves nine and twelve opened. An emergency was declared and an ILS flown to an uneventful landing. Brakes were applied gradually after the drag chute deployed and the aircraft was stopped straight ahead on the runway approximately 1000 feet from the end. On postflight, the hydraulic package was changed.

Lessons learned. The dilemma caused by wanting to burn down fuel for a light gross weight landing while maintaining fuel to proceed to an alternate, required considerable planning. A base with VFR conditions had to be selected and max range procedures used to arrive there. The time required to follow through on the tech order procedures was minimal, however, conservation of fuel to maintain flexibility was essential. The landing was no different from a normal landing, but the aircraft has a tendency to "heel over" on the side with retracted gear. This is easily handled by application of rudder pressure toward the retracted gear. However, the pilot must continue to fly the aircraft until it is stopped. I would question the advisability of making this type landing on a wet runway or with a significant amount of crosswind crab.

SAC's security and . . .

NIGHT DUTY

SSGT Bill McCormick
320 Bomb Wing, Mather AFB

Typical of security police at SAC bases are personnel assigned to Mather's 320th Bomb Wing Security Alert Team. The duty includes many nights that are often long and lonely as personnel patrol SAC's alert aircraft. Their job: to insure the security of Mather's alert aircraft and to prevent unauthorized persons from entering the secured area.

This job of SAC's security policemen begins when most people are getting ready for bed, and the night goes like this . . .

It is 11:00 p.m. and the flight falls in as the team members assemble for guard mo
open ranks inspection. The flight chief relays orders of the day.

Iembers of the team ride out to their posts on the ight line and alert pad.

The nights become long and lonely as the sentry walks his beat around the B-52.

hift supervisor checks posts and a sentry reports during a nighttime round.

desk sergeant at central security control, the nerve center of the night's activities oordinates police actions.

he morning sunrise signals the arrival of a new shift and the sentry clears his weapon . . ending yet another night for the Mather 320th Security Alert Team.

Photos by TSGT JORGE NIEMI

BIG INSTRUMENT

Visual Descent Point

Capt. Lewis M. Hatch
1st Combat Evaluation Group
Barksdale AFB

What is the purpose of a nonprecision approach? Believe it or not, the purpose of the approach is **not** to deliver an aircraft to the missed approach point. As with the precision approach, a non-precision approach should deliver an aircraft to a position from which a safe landing can be completed. Yet when many aircrews practice approaches, they will fly the nonprecision approaches (other than ASR) with the sole intention of executing a missed approach, and will land out of them as seldom as possible. This normally stems from a history of improperly planned and flown non-precision approaches. We practice instrument approach procedures to enable us to land when the weather is down around our ears. Therefore, it doesn't make sense to employ techniques that force us into a missed approach. Proper use of a Visual Descent Point (VDP) is one technique that will allow us to alleviate this problem. Let's take a look at VDP's — what they are, how they're used, and how to compute them.

First of all, what is a VDP? Simply stated, it is some point along a nonprecision final approach course where a normal glide slope to the runway intersects the MDA (Figure 1). The VDP, therefore, becomes the point at which a pilot would like to depart the MDA in order to permit a normal descent to landing. This point will normally occur prior to arrival at the missed approach point.

The first, and most important, function of a VDP is to allow the pilot to more closely monitor his visual transition to landings. It will help prevent a pilot, who may be experiencing some form of visual illusion, from descending out of the MDA too early. Or, conversely, if the runway is not in sight until well past the VDP, a pilot can be prepared for a missed approach and realize that he may need to fly a precision approach or proceed to an alternate. The second function of a VDP is to allow the pilot to compute a rate of descent that will place him at the MDA at, or prior to, the VDP.

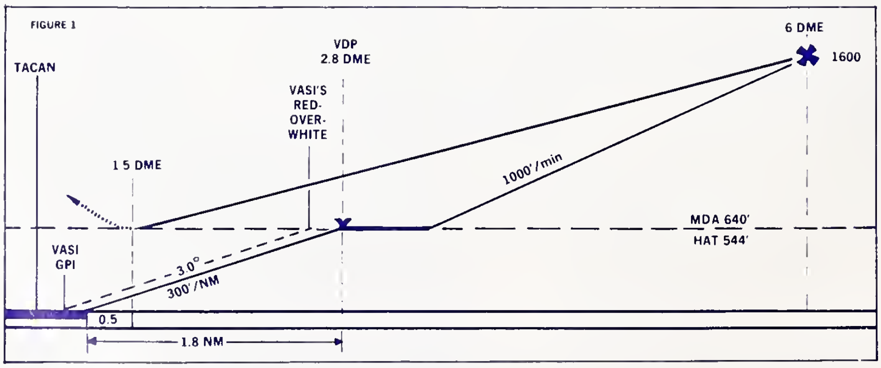


FIGURE 1

The importance of VDP's is demonstrated graphically by the fact that AFM 55-9 (TERPs) now requires that certain types of nonprecision approaches submitted for inclusion in DOD FLIP terminal approach books will have a depicted VDP (Figure 2). Additionally, as existing approaches undergo periodic revision, some will be changed to include VDP's. Unfortunately, completion of this program will take some time and not all approaches will be modified. In other words, it will still be necessary for aircrews to determine VDP's.

Today, a large number of SAC aircrews do not consider VDP's when planning nonprecision approaches. Some claim that they have never been taught how to compute them, while other crew members have heard of VDP's but elect not to use them ("Hey, man, I'm a pilot, not a computer.") Some of the inherent aversion to mathematical computations displayed by pilots goes back to barnstorming days when, "Skill, cunning, and daring would always overcome science and knowledge." Things have changed, however, and few of us have the vast experience required to rely completely on the TLAR (That Looks About Right) method of instrument flying. So let's consider an easy method of determining the VDP (fifth grade math required). The time to compute VDP's and their related information is during mission planning, when you have all your FLIP pubs available and all the time in the world.

Step 1: Determine the glide slope that you intend to use from the MDA to touchdown. While the optimum glide slope for precision approaches and VASI's at an Air Force Base is 2.5°, they may routinely be as high as 3.0°. Additionally, the VASI glide slope will normally coincide with existing precision approaches to the same runway. Any nonstandard VASI arrangement will be noted in the IFR supplement. This should be checked prior to starting any computations. At civilian fields served by the airlines, expect a 3.0° VASI glide slope. At airfields without VASI's, it is easiest for most pilots to use the glide slope they normally fly and are most familiar with.

Using the HI-TACAN RWY 22L at Mather (Figure 3), there is a 3.0° GS published and no note in the IFR Supplement of nonstandard VASI's. Target descent gradient from the MDA is 300′/NM (3.0° x 100). For a 2.5 GS, gradient would be 250′/NM (2.5 x 100).

Step 2: Determine the HAT for the approach. This is easy enough, just extract it from the approach plate.

For the Mather approach the HAT is 544 feet AGL.

Step 3: Now apply the HAT and the final approach gradient to determine the distance of the VDP from the end of the runway and from the FAF. Where available, determine the DME for the VDP. These figures will be an **approximation.**

For the Mather approach, we know that the intended descent gradient is approximately 300′/NM. Therefore, we can determine where this path will intersect the HAT/MDA (Figure 1). Simply divide the HAT by the gradient to determine how far from the end of the runway this point occurs. $\frac{544'}{300'/\text{NM}}$

equals approximately 1.8 NM

Using the approach plate again, we see that the missed approach point occurs at 1.5 DME. Beneath that we find that the MAP is .5 NM from the end of the runway. Therefore, the VDP occurs at 2.8 DME (the runway end is at 1.0 DME and the VDP is 1.8 NM beyond that). Let's round that off to 3.0 DME to make our next computation easier. If the FAF is at 6.0 DME and the VDP is at 3.0 DME, then the VDP is 3.0 miles from the FAF.

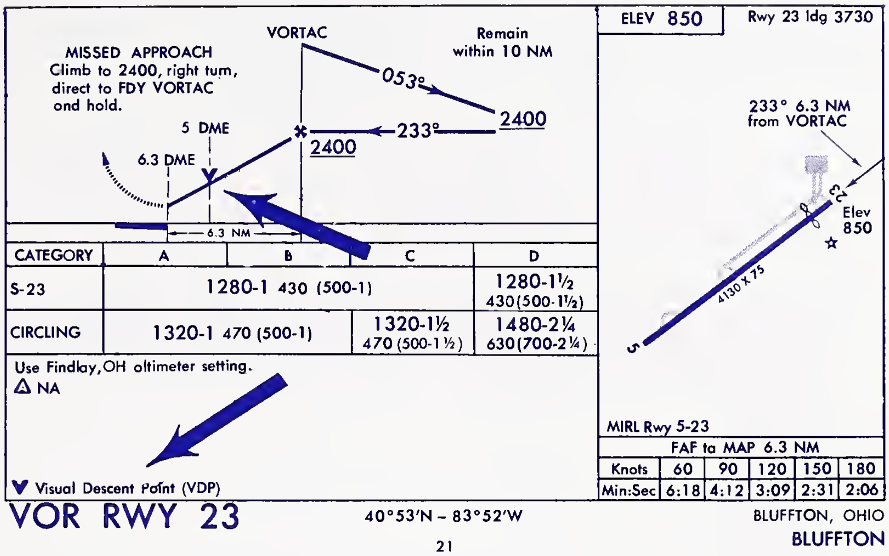

MISSED APPROACH
Climb to 2400, right turn, direct to FDY VORTAC and hold.
VORTAC
Remain within 10 NM
053°
2400
233°
2400
5 DME
6.3 DME
6.3 NM
ELEV 850
Rwy 23 ldg 3730
233° 6.3 NM from VORTAC
23
Elev 850
4130 X 75
5
MIRL Rwy 5-23
CATEGORY | A | B | C | D
S-23 | 1280-1 430 (500-1) | 1280-1½ 430 (500-1½)
CIRCLING | 1320-1 470 (500-1) | 1320-1½ 470 (500-1½) | 1480-2¼ 630 (700-2¼)
Use Findlay, OH altimeter setting.
NA
Visual Descent Point (VDP)
FAF to MAP 6.3 NM
Knots 60 90 120 150 180
Min:Sec 6:18 4:12 3:09 2:31 2:06
VOR RWY 23
40°53′N – 83°52′W
21
BLUFFTON, OHIO
BLUFFTON

FIGURE 2

Step 4: Determine the descent gradient from the FAF to the VDP using the distance between the two and the altitude to be lost (FAF altitude — MDA).

For this approach we need to lose about 1000 feet in approximately 3 NM (1600′ - 640′ = 960′ or about 1000′). The descent gradient would be $\frac{1000'}{3\ \text{NM}}$ or about 330′/NM.

Step 5: Using the descent gradient computed above the approximate airspeed to be flown, determine an approximate vertical velocity.

As an example, if we expect to penetrate in a KC-135 at 160,000 pounds, our approach speed at that point should be 148 KIAS (which is almost 150 KIAS, which is 2½ NM/min — CLOSE ENOUGH!). At 330′/NM and 2½ NM/min, we should descend at 330 x 2.5 or **about** 825′/min. Using a fairly comfortable descent rate of 1000′/min should insure arrival at the MDA slightly prior to the VDP, allowing for the time required to establish the descent and level off at the MDA prior to intercepting the VASI's. Keep in mind when flying the approach that a marked increase in ground speed due to tailwind may require a greater rate of descent.

Now, without the text, the computation would sound like this:

"—Let's see, VASI's are 3.0° GS or 300′/NM.

"—HAT is 554′ AGL so VDP is at $\frac{554'}{300'/\text{NM}}$ or about 1.8 NM from the runway.

"—From the chart, the runway end is 1.0 DME so VDP is 2.8 DME.

"—We'll use 3.0 DME for VDP.

"—That gives us about 3.0 DME to lose about 1000 feet.

"—That's about 330′/NM.

FIGURE 3

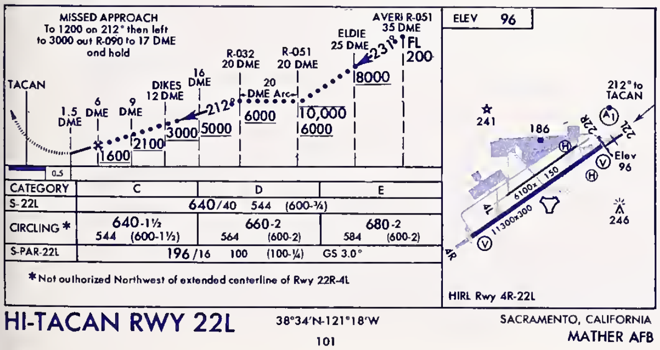
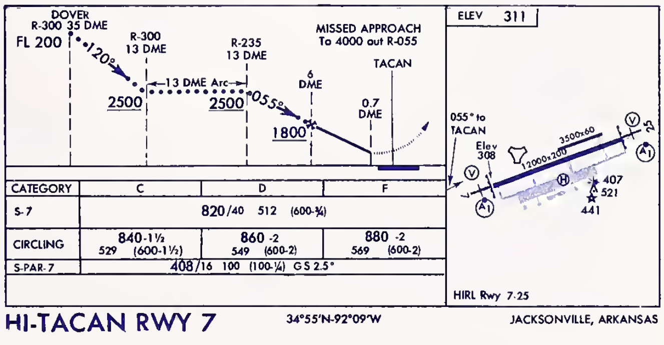


FIGURE 4



"Let's see, we'll be penetrating at 160,000 pounds . . . Copilot what's that approach speed . . . 148 KIAS? OK, that's about 2½ NM/min.

"—UH . . . at 330'/NM x 2½ NM/min . . . that gives us about 825/min rate of descent. We'll use 1000'/min."

Notice all the "about's." Remember that this procedure gives you only approximate figures.

The only major difficulty that might arise in these computations centers around determining where the VDP lies in relation to the final approach fix. In the example just discussed, distances were easily determined from the profile view of the approach plate. Consider the approach to Little Rock (Figure 4), however. At what DME is the end of the runway? There is no way to accurately determine this with the information presented on the chart. Unless you are familiar with the field, you must estimate. The aerodrome sketches appear very close to scale (notice that the profile view is **not** to scale). In this case I would estimate that the TACAN is a little less than ½ mile from the runway, which is 2 miles long. It would be close enough for our purposes to estimate the approach end of the runway at approximately .5 DME and work from there to determine the VDP.

For most VOR approaches, the procedure is easier. The depiction on the Altus profile view (Figure 5) is the most common. The distance from the FAF to the end of the runway is readily available either on profile view or with the timing block. This makes locating the VDP and computing the rate of descent from the FAF a simple operation since the missed approach point is the end of the runway. It should be noted, however, that on some approaches (Figure 6) the distance depicted on the timing block will not coincide with that shown under the profile view. This occurs because the missed approach point falls at some point other than the end of the runway. The figure necessary for VDP computations is the distance from the end of the runway to the FAF and would be taken from the profile view, not the timing block. Where VASI's are provided and the computed descent rate is flown, constructing timing criteria for the VDP is not essential. The VASI's will tell you when to descend. At a field with no VASI's available, it may be desirable to determine the VDP and a related timing criteria. Due to the relative inaccuracies of timing, however, any descent from the MDA should be predicated on positive visual contact with the runway environment.

It is interesting to note that crew members who regularly figure VDP's are able to compute all data for a strange field approach in from 1½-5 minutes, depending on the complexity of the approach. That's not much time to spend during mission planning when the results may make the difference between flying successful and safe approach or proceeding to an alternate. If you haven't been using VDP's, give them a try. Practice the computations and fly them to a landing. If the equipment is working and your computations are correct, you should see the VASI's show red-over-pink at the VDP (due to the fact that we computed our distance from the end of the runway and the VASI's bring you to a point 750-1000 feet down the runway (Figure 1)). Remember that the key to flying a good nonprecision approach is prior planning and practice, and the purpose of practicing nonprecision approaches is to allow us to land, not to make a missed approach.

FIGURE 5

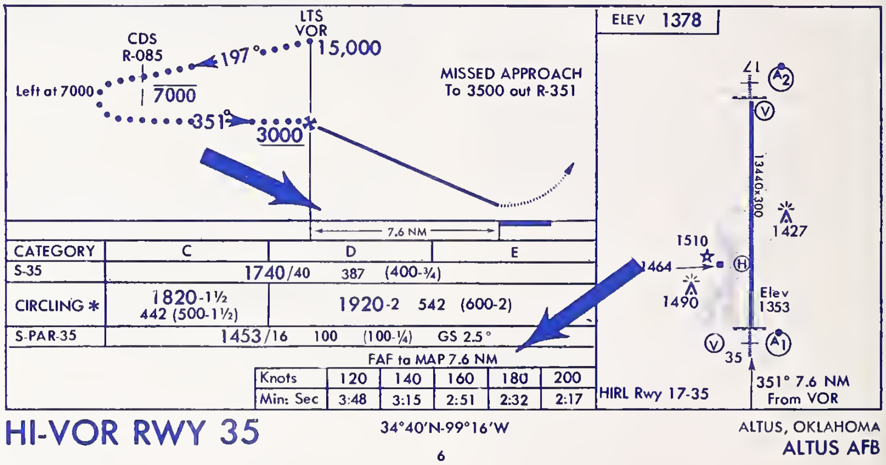
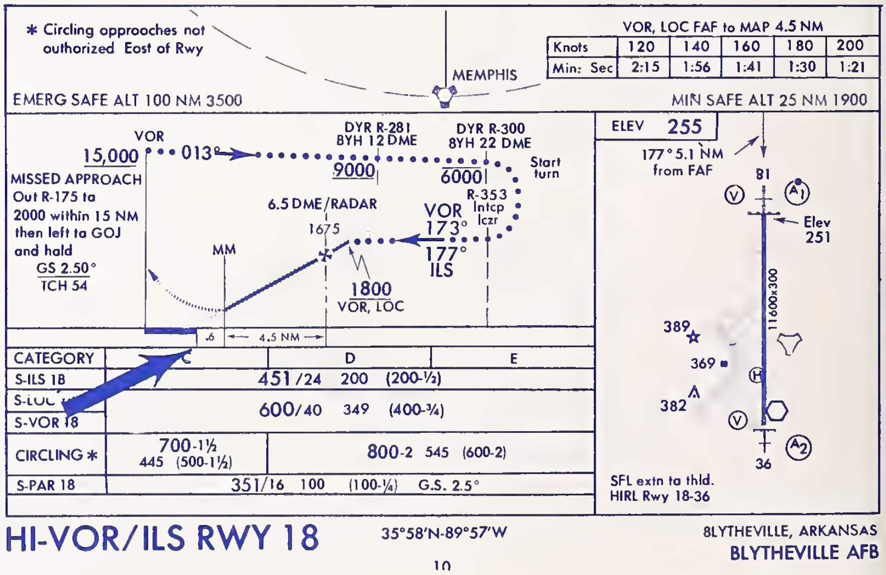
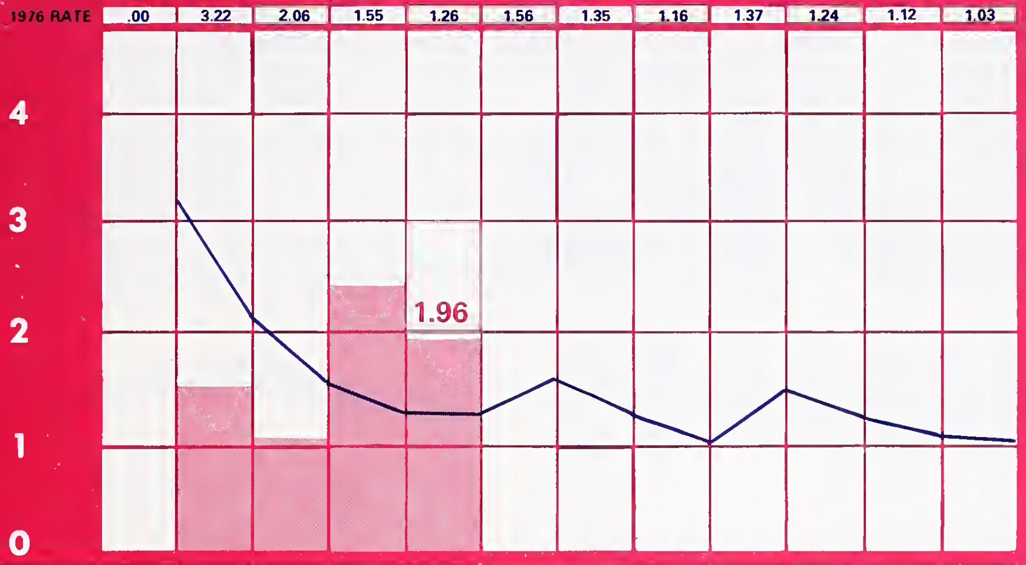


FIGURE 6


* Circling approaches not authorized East of Rwy
MEMPHIS
VOR, LOC FAF to MAP 4.5 NM
Knots 120 140 160 180 200
Min: Sec 2:15 1:56 1:41 1:30 1:21
EMERG SAFE ALT 100 NM 3500
MIN SAFE ALT 25 NM 1900
VOR
15,000
013°
DYR R-281 BYH 12 DME
9000
DYR R-300 BYH 22 DME
6000
Start turn
R-353 Intcp lczr
MISSED APPROACH Out R-175 to 2000 within 15 NM then left to GOJ and hold
GS 2.50° TCH 54
6.5 DME/RADAR
1675
VOR 173°
177° ILS
MM
1800 VOR, LOC
.6
4.5 NM
ELEV 255
177° 5.1 NM from FAF
81
Elev 251
11600x300
389
369
382
36
SFL extn to thld. HIRL Rwy 18-36
CATEGORY C D E
S-ILS 18 451/24 200 (200-½)
S-LOC 18 S-VOR 18 600/40 349 (400-¾)
CIRCLING * 700-1½ 445 (500-1½) 800-2 545 (600-2)
S-PAR 18 351/16 100 (100-¼) G.S. 2.5°
HI-VOR/ILS RWY 18
35°58'N-89°57'W
BLYTHEVILLE, ARKANSAS
BLYTHEVILLE AFB
10

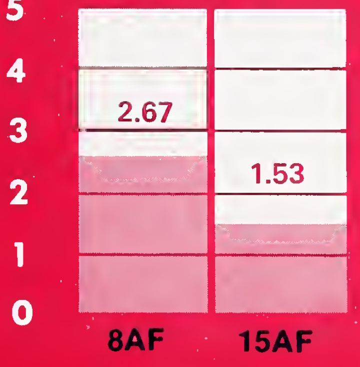
1977 Flying Safety Rate

SAC CLASS A MISHAP RATE (PER 100,000 FLYING HRS)



MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	0	2	0	0	0	1	0	0	1	0	0	0
1977	0	1	0	2	0							

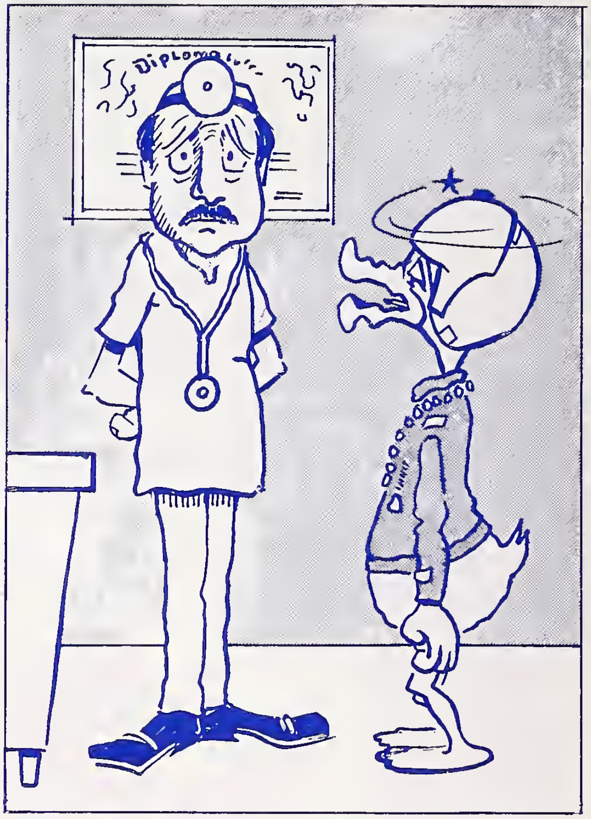
1977 SUBORDINATE CMD RATES



MISHAP STATUS

FB-11	FEB 77
B-52	APR 77
KC-135	APR 77

LEGEND =1976 RATE



Frankly Doc, I think I'm freaking out on cold capsules!

SEE THE FLIGHT SURGEON

From the beginning of his career, the aviator is indoctrinated, lectured, and preached at concerning the hazards of self-medication while flying aircraft. In almost all cases of serious illness, the aviator is smart enough to contact the flight surgeon. But the problem arises when the individual opts to treat himself — when he believes that his cold, sore throat, or minor ailment isn't serious enough to warrant getting grounded. Another problem is that the ailment which induces a crewmember to take nonprescription drugs may be a sign of a much more serious illness which will not be discovered by self-medication.

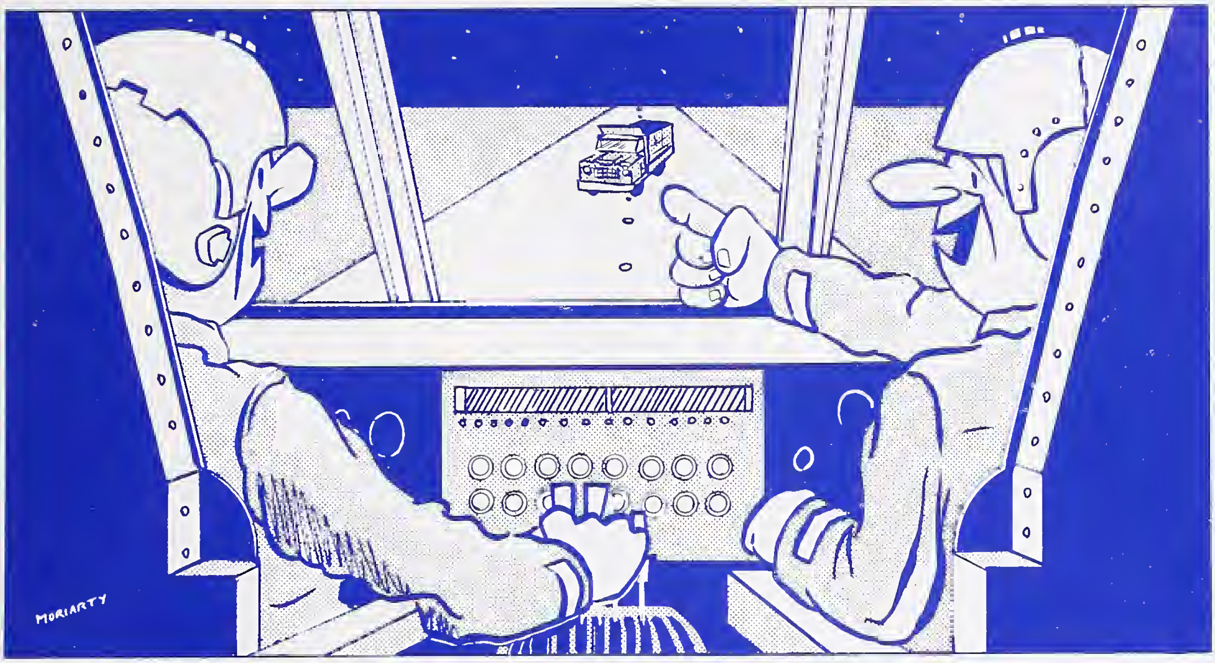
There are numerous over-the-counter nonprescription drugs available for treating the common cold and other minor illnesses. The fact that they are available without prescription may lead some aviators to believe there is no hazard involved in taking them and continuing to fly. A recent fatal accident emphasizes how wrong such a belief is.

While flying alone on a low-level mission, an IP flew into the ground in a level attitude and was killed. Nothing could be found wrong with the engine or airframe. Weather was not a problem and there was no attempt to eject. Although the cause of the accident remains undetermined, the most probable cause was due to pilot error.

During the investigation it was determined that a few days before the accident the pilot had been taking a well known over-the-counter medication which contains tiny time capsules. The pathology report of the autopsy revealed the presence of chlortrimeton (chlorpheniramine) in the pilot's lungs, kidneys, liver, and blood in amounts approximately 10 times greater than would be expected from normal therapeutic use. The same drug is found in the time capsules.

The accident board concluded that the high level of chlortrimeton present in the pilot's body could easily have caused drowsiness or inattention. This was supported by the fact that there was no ejection attempt. Impact with the ground was in a level attitude with the aircraft on the preplanned course.

All crewmembers must be aware of the effects of medications which they are using. These effects vary from person to person and may not be the same with successive doses taken by an individual. It should be emphasized that no medication should be taken without consulting a flight surgeon. While this was not an Air Force mishap, the message applies to all aviators. Even the briefest span of inattention during a critical phase of flight can cause catastrophic consequences. (Thanks to the U.S. Naval Center)



Hey!! That truck on the runway is the same color as my old Chevy pickup!

CLEARED TO LAND — BEWARE OF OBSTRUCTIONS ON RUNWAY

The flight was a scheduled training mission on the return from an incentive flight. The mission was flown without incident until the full stop landing. A civilian contract was in progress to remove and replace runway joint sealer on the first 6000 feet of runway 08. The contractor is required to be in radio communication with the control tower at all times and to be able to clear the runway within five minutes of notification. A hand-held FM radio monitored by the tower is furnished to the contractor by base CE for necessary communications. The contractor was working on the last 2000 feet of runway 26. One of the workers was tasked to remove the routed sealer from a section of the runway behind the area where the main crew was working. The worker was using a truck with a trailer attached to it for this purpose. He finished his assigned task at approximately twilight and left the truck parked facing east on the runway approximately 1700 feet from the end, between 75 to 100 feet south of the centerline. He did not turn on any vehicle lights. He then proceeded to help the remainder of the crew on clearing out the joints west of the parked truck. He did not inform his supervisor that he left the truck parked on the runway. The work crew continued and the truck was forgotten.

Work progressed normally without interruption until approximately 2200 hours when the tower personnel contacted the work supervisor and instructed him to clear the runway for landing traffic. The B-52 crew had been in the radar traffic pattern making restricted low approaches. During the base to final portion of their second approach, the aircraft commander advised approach control of his intention to full stop out of the next approach. This request was relayed to tower personnel who in turn notified the contractor to clear the runway. The contractor cleared the runway of all of his men and equipment with the exception of the forgotten truck. The contractor reported to tower via radio that the runway was clear. Final landing clearance was issued by tower through approach control. The aircraft commander, an IP, was in the right seat and the crew copilot in the left seat. The copilot made the landing. Landing was normal without incident until approaching the 2000-foot remaining marker. At this point, both pilots saw what appeared to be a silhouette of a dump truck 300 to 500 feet in front of them and 75 to 100 feet to the left of centerline. The aircraft was on centerline and traveling at approximately 30 KIAS. The IP immediately initiated a controlled turn to the right and offset the aircraft 20 to 30 feet north of runway centerline to insure clearance from the vehicle. The contractor saw the forgotten truck too late to react. The supervisor of flying was monitoring aircraft approaches from the approach end of the runway and was unable to see the vehicle on the runway. The aircraft's left wingtip contacted the left front corner of the truck. While the damage was not major, the potential was there for a much more serious occurrence. Shortly after this incident the full potential of this type situation was realized.

PROFESSIONAL PERFORMERS

Individuals selected for these pages as SAC's top professional performers of the month are chosen from nominations made by all SAC units. Selection is made only after all nominations have been carefully screened and those chosen meet the highest standards of excellence outlined in SACR 127-2.

PILOT OF THE MONTH Capt Stephen O. Fought, 22 Bombardment Wing, March Air Force Base.

TITAN Crew S-199, 308 Strategic Missile Wing, Little Rock AFB: MCCC Capt Jimmy T. White, DMCCC 2Lt Thomas G. Stavropoulos, MSAT Sgt Dennis W. Black, and MFT Sgt James E. VanCise.

MAINTENANCE MAN TSgt George T. Callahan, 90 Strategic Missile Wing, Francis E. Warren Air Force Base.

MINUTEMAN Crew E-144, 90 Strategic Missile Wing, F. E. Warren AFB: MCCC Capt John D. Nolander, and DMCCC 1Lt Robert D. Cox.

ANNOUNCEMENTS FROM

AFISC

The flight surgeon is responsible for determining if flying personnel are medically fit to perform flying duties.

This responsibility applies when fliers are seen after duty hours in the emergency room. The treatment must be evaluated by a flight surgeon.

At present there is little standardization of policies. Some automatically ground all fliers seen in the emergency room regardless of the treatment given. In others, nonflight surgeons, including medical technicians, are determining if an individual is medically fit to fly.

Each medical facility should establish procedures to insure that:

The flight surgeon is consulted on all treatments given to flying personnel, including air traffic controllers and weapons controllers.

A flight surgeon is the only person who determines if a flier is medically/qualified to perform flying duties. (Lt Col Zeiner, SGMC, AUTOVON 876-6856)

SAC HISTORIAN

The office of the Historian, Headquarters Strategic Air Command would like to hear from current and former SAC aircrew and ground crew members on any record flights or other significant flights they were involved in. We could be most interested in photographs, diaries, and anecdotes on such flights. All items will be treated with care and returned. (Office of the Historian (HO), Hq SAC, Offutt AFB, NE 68113, AUTOVON 271-3178/2245)

Col Donald F. Gaylor, commander, 381st SMW.

A WAY OF LIFE

Continued from page 7

Trophy as the best missile wing in SAC. In addition, McConnell's competitors are the only team to have ever led the contest from the first day to the last, a feat they accomplished in Olympic Arena 1975.

The Titan IIs that surround McConnell are large, two-stage, liquid fueled rocket powered ICBMs that have significant performance improvements over the earlier Titan I weapon system. The Titan II has more powerful engines, a larger warhead, all inertial guidance, hypergolic fuel (fuel that ignites spontaneously with an oxidizer), oxidizer stored in the missile itself, and the capability of being fired from hardened and widely dispersed underground silo launchers. Directly connected to each Titan II silo is an underground launch control capsule manned by a missile combat crew of two officers and two enlisted men.

The 381 SMW's history is long. Constituted as the 381 Bombardment Group (H) in October 1942, the wing was activated on 3 November of that year. Col Joseph J. Nazzaro was the first commander of the 381st. Col Nazzaro was subsequently promoted to general and also became commander in chief of SAC.

After a distinguished record in combat, the 381st was inactivated in August 1945. Then in November 1961, the 381st was reactivated and assigned to SAC. The unit had nine Titan II missiles assigned to it upon activation. Later nine more were assigned. A 381st missile combat crew launched the unit's first missile from Vandenberg on 4 November 1963. This shot concluded the most successful demonstration and shakedown operation for missiles in Air Force history. The next two years were a period of hard work and steady accomplishment for the 381st personnel as all efforts were directed toward making the missiles and complexes operationally ready.

The United States Air Force Missile Safety Award which recognizes the strategic missile wing that had the most outstanding and effective safety program was presented to the 381st for the years 1966, 1967, 1968 and 1969. No other wing has ever received this award for so many consecutive times.

In April 1972, the 381 SMW was involved in many activities. One of those was the fifth Olympic Arena competition. At the week long contest, the 381st became the first Titan II wing to win the Blanchard Trophy. Overall, the wing placed first in seven of the ten categories which included: Best Titan Wing, Best Missile Crew, Best Titan Crew, Best Maintenance Team, Best Titan Reentry Vehicle Team, Best Titan Electronic Lab Team and Best Titan Vertical Alignment Team. Also in April, the wing was awarded the Fifteenth Air Force Resources Management Trophy.

The year of the Titan occurred again at Olympic Arena 1975. McConnell's 381st representatives completely dominated the five-day contest, leading the competition from the first day to the last — the only team to ever do so. They scored a record total of 4774 points (of a possible 4800) and finished 144 points ahead of the second place team (also a record). In addition to taking their second Blanchard Trophy, the 381st team also claimed the Best Titan Wing Trophy, Best Operations Team, Best Missile Crew, Best Titan Crew and Best Propulsion Team. Today, the 381st continues its proud record, and safety still remains a way of life at SAC's McConnell based Titan wing.

SAC SAFETY SCREEN

19 BMW, Robins Crew E-19: P Capt James F Ross, CP 1Lt Kenneth Chisolm, RN 1Lt Randolph Cagle, N 1Lt James LaSalvia, EWO 1Lt Thomas Merriman, G Sgt David R Spiro

19 BMW, Robins Crew E-117: P Capt Dale Burbank, CP 1Lt Brian Loftus, N Capt Charles Conaway, BO SSgt Jack G Bracken

44 SMW, Ellsworth Crew S-135: MCCC 1Lt Timothy C Crews, DMCCC 2Lt Michael P Taccone

68 BMW, Seymour Johnson Crew E-121: P Capt Stanley W Allen, CP Capt Robert L Crenshaw, N Capt Mark R Antell, BO MSgt Robert L Burden

97 BMW, Blytheville Crew R-17: P Capt Thomas R Booth, CP Capt Melvin C Williams, RN Capt Jerry D Ledford, NN 1Lt Michael J McGann, EWO Capt George L White, AG SSgt Lee McCothran

97 BMW, Blytheville Crew R-27: P Lt Col Sidney S Horton Jr, CP 1Lt James L Buckley, RN 1Lt Charlie R Ownes, NN 2Lt Douglas R Kincannon, EWO 1Lt Charlie Childress Jr, AG A1C Dale A Emmons

305 AREFW, Grissom Crew R-105: IP Capt David A Bechtol, CP 1Lt Lawrence C Bollrud, N 1Lt Dennis W McDuffie, IBO Sgt John J Mehall Jr

321 SMW, Grand Forks Crew S-135: MCCC Capt John B Steele, DMCCC 1Lt Harold D Spruell

341 SMW, Malmstrom Crew E-089: MCCC Capt Leroy J Hult, DMCCC 2Lt Steven G Theriault

351 SMW, Whiteman Crew E-192: MCCC 1Lt Randall N Tumblin, DMCCC 2Lt Richard E Webber

379 BMW, Wurtsmith Crew E-48: P Capt Robert M. Cook, CP 1Lt Larry B Voss, NB Capt Robert E Beaman, NN 1Lt Gene P Burieux, NE 1Lt Dryden J Leitner, AG SSgt Anthony J Wujcik

379 BMW, Wurtsmith Crew R-107: P Maj Michael L Carr, CP 1Lt Merville R Haerter, N 1Lt David W Spatig, BO TSgt Fred F McClure

380 BMW, Plattsburgh Crew S-104: IP Capt Thomas L Merrill, CP 1Lt John A Bushko, IN Capt Richard P Muse, IS SSgt Earl A Darling

381 SMW, McConnell Crew R-031: MCCC Maj Edward Lieberman, DMCCC Maj George G McCormick, BMAT Sgt Timothy O Kelley, BMFT Amn Luis Estrada

384 AREFW, McConnell Crew R-160: P Capt Joseph R Johnson, CP 1Lt Daniel A Kopack, N 1Lt David E Benton, BO SSgt Charles W Bogda Jr

390 SMW, Davis-Monthan Crew R-081: MCCC 1Lt Stephen F Thode, DMCCC 2Lt Richard S Hening, BMAT A1C Gilbert L Ayscue, BMFT SrA Michael J Patterson

909 AREFS, Kadena Crew E-107: P 1Lt Frank M Philbin, CP 1Lt Norman H Deunk, III, N 1Lt John S Hebert, BO SSgt James A Justice

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW SACR 127-2.*

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UNIVERSITY OF FLORIDA
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HALL OF FAME

TACTICAL FLYING

OVER TWENTY-ONE YEARS

170 AREFG, McGuire (NJANG)	NONE

OVER NINETEEN YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar '58
157 AREFG, Pease (NHANG)	Jun '58

OVER EIGHTEEN YEARS

97 BMW, Blytheville	Aug '58
940 AREFG, Mather (USAFR)	May '59

OVER SEVENTEEN YEARS

916 AREFS, Travis	Sep '59

OVER SIXTEEN YEARS

19 BMW, Robins	Oct '60
151 AREFG, Salt Lake City (UTANG)	Feb '61
161 AREFG, Sky Harbor (AZANG)	Apr '61
126 AREFW, Chicago O'Hare (ILANG)	Apr '61

OVER FIFTEEN YEARS

134 AREFG, McGhee Tyson (TNANG)	Aug '61
11 AREFS, Altus	Feb '62

OVER FOURTEEN YEARS

301 AREFW, Rickenbacker	Jul '62
96 BMW, Dyess	Aug '62
449 BMW, Kincheloe	Aug '62

OVER TWELVE YEARS

160 AREFG, Rickenbacker (OHANG)	Dec '64
136 AREFW, Dallas NAS (TXANG)	Jun '65

OVER ELEVEN YEARS

320 BMW, Mather	Jul '65

OVER TEN YEARS

452 AREFW, March (USAFR)	Sep '66
92 BMW, Fairchild	Feb '67

OVER NINE YEARS

55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67
319 BMW, Grand Forks	Dec '67
22 BMW, March	Feb '68

OVER EIGHT YEARS

128 AREFG, Gen Mitchell (WIANG)	Jan '69
5 BMW, Minot	Feb '69

OVER SEVEN YEARS

42 BMW, Loring	Sep '69
141 AREFW, Fairchild (WAANG)	Oct '69
28 BMW, Ellsworth	May '70

OVER FIVE YEARS

7 BMW, Carswell	Mar '72
101 AREFW, Bangor (MEANG)	Mar '72
416 BMW, Griffiss	May '72

OVER FOUR YEARS

305 AREFW, Grissom	Aug '72
376 SW, Kadena	Nov '72
379 BMW, Wurtsmith	Apr '73

ICBM

OVER THIRTEEN YEARS

381 SMW, McConnell	Nov '63

OVER TWELVE YEARS

90 SMW, F E Warren	Jul '64
1 STRAD, Vandenberg	Sep '64

OVER ELEVEN YEARS

308 SMW, Little Rock	Aug '65

OVER SEVEN YEARS

341 SMW, Malmstrom	Apr '70

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.